CURRICULUM VITAE

1. PERSONAL INFORMATION

SURNAME: SPANAKIS
NAME: EMMANUEL
BIRTH YEAR: 1973
RESIDENCE: HERAKLION, CRETE, GREECE
e-mail: *spanakis@materials.uoc.gr*

MARITAL STATUS: MARRIED. 2 CHILDREN
EMPLOYMENT: TEACHING AND LABORATORY STAFF (EDIP)
EMPLOYMENT ADDRESS: DEPARTMENT OF MATERIALS SCIENCE AND TECHNOLOGY, UNIVERSITY OF CRETE, P.O. BOX 2208, VOUTES, HERAKLION, CRETE GREECE GR-71003

2. EDUCATION

1991 - 1995:	**BsC**: Physics Department, School of Applied Science and Technology, University of Crete, Greece (Grade 8.60/10.00, 1st of his year).
7/1995:	Summer School in Advanced Physics, University of Crete.
9/1995 - 12/1996:	**MsC:** Physics of Condensed Matter, Physics Department, University of Crete, Greece.
1/1997 - 4/2001:	**PhD:** *"Mechanical properties and their photo-induced changes in hydrogenated amorphous Silicon: Study of the role of hydrogen"*. Supervisor: Prof. Panos Tzanetakis. Physics Department, University of Crete, Greece
7/2001:	Crash course in *Ground Meteorogical Observations for Air Traffic* in the Greek National Meteorological Service (HNMS).

3. FOREIGN LANGUAGES

- English: *"University of Cambridge, First Certificate in English"* (lower), Grade: A

4. POSTGRADUATE HONORS

1. 2nd Prize from the Greek National Science Foundation for second rank admittance to the Physics Department of the University of Crete (UoC), Greece.
2. Three consecutive 1st prizes from the Greek National Science Foundation for ranking first in the 1st, 2nd and 3rd year course exams at the Physics Department of UoC, Greece.
3. 1st prize from the Municipality of Heraklion, Crete, Greece for ranking first in the final exams of the "Summer School in Advanced Physics" (University of Crete, July 1995).
4. Scholarship from the Institute of Electronic Structure and Laser (IESL) of the Foundation for Research and Technology Hellas (FORTH) for postgraduate studies in the Physics Department of UoC, Greece (September 1995 - December 1996).
5. Scholarship from the University of Crete and partially from IESL-FORTH for PhD studies in the Physics Department of UoC, Greece (January 1997 - April 2001).
6. Award from the Greek National Meteorological Service (HNMS) for ranking first in the final exams of the Crash course in *Ground Meteorogical Observations* (July 2001).

5. AUTHORSHIP: BOOK CHAPTERS AND ESSAYS

1. Undergraduate essay: *"Light absorption from Hydrogenated Amorphous Silicon"* written under the supervision of Prof. P. Tzanetakis (*UoC, Spring 1995, Pages: 70, in Greek*).
2. Chapter entitled: "Basic photosensitive semiconductor devices" for the book "Artificial Vision Sensors" written under the supervision of Prof. P. Tzanetakis (*UoC, January 1998, Pages: 60, in Greek*).
3. PhD dissertation entitled *"Mechanical properties and their photo-induced changes in hydrogenated amorphous Silicon: Study of the role of hydrogen"* and written under the supervision of Prof. P. Tzanetakis (*UoC, April 2001, Pages: 107*).
4. Lab manual entitled «Mechanical and thermal properties of Materials – Hard matter: synthesis and characterisation» for the lab course «Mechanical and thermal properties of Materials – Hard Matter Laboratory» of the third year of the UoC's Materials Science and Technology Department curriculum. Co-author, Dr E. Stratakis. (*UoC, February 2005, Pages: 148, in Greek*)
5. Three lab exercises entitled *'Exercise 5 – Oscilloscope'*, *'Exercise 17 – Laser diffraction'* and *" Exercise 11 – Electron beams in magnetic fields: determination of e/m ratio"* for the lab manual «Physics Lab II» of the corresponding 1st year lab course of the Departments of Sciences, Technological Educational Institute of Crete (TEI-C), Greece (TEI-C, *April 2007 and November 2008, Pages: 35, in Greek*)
6. Two lab exercises entitled *'Exercise 4 – Velocity and acceleration study on inclined surfaces'* και *'Exercise 6 – Study of static and kinetic friction'* for the lab manual «Physics Lab I» of the corresponding 1st year lab course of the Departments of Sciences, Technological Educational Institute of Crete (TEI-C), Greece (TEI-C, *May 2008, Pages: 19, in Greek*).
7. Four lab exercises entitled '*Synthesis and optical properties of Gold nanoparticles', 'Magnetic Nickel nanowires', 'TiO$_2$ nanopowder synthesis' and 'Photocatalytic properties of TiO$_2$'* for the lab manual of 4th year lab course «Nano and Bio materials Lab» of the UoC's Materials Science and Technology Department curriculum. (*UoC, September 2011, Pages: 38, in Greek*)
8. Lab manual entitled «*Electricity-Magnetism: Laboratory Manual*» for the lab course «*Physics Laboratory II: Electromagnetism-Optics*» of the second year of the UoC's Materials Science and Technology Department curriculum. (*UoC, April 2017, Pages: 105, in Greek*)

6. PUBLICATIONS IN INT'L PEER REVIEWED JOURNALS

1. *"Space charges resulting from photocurrents exceeding the thermionic emission currents in a-Si:H"* **E. Spanakis**, E. Stratakis, N. Kopidakis, P. Tzanetakis and H. Fritzsche, Journal of Non-Crystalline Solids 266-269 (2000) pp. 247-252.
2. *"Stress and internal friction associated with light-induced structural changes of a-Si:H deposited on crystalline Silicon microcantilevers"* E. Stratakis, **E. Spanakis**, H. Fritzsche and P. Tzanetakis, Journal of Non-Crystalline Solids 266-269 (2000) pp. 506-510.
3. *"Elastic properties, intrinsic and photo-induced stress in a-Si:H thin films with different hydrogen content"* **E. Spanakis**, E. Stratakis, P. Tzanetakis and Qi Wang, Journal of Applied Physics 89 [8] (2001) pp. 4294-4300.
4. *"Photoinduced stress in hydrogenated amorphous silicon films"* E. Stratakis, **E. Spanakis**, P. Tzanetakis, H. Fritzsche, S. Guha and J. Yang, Applied Physics Letters 80 [10] (2002) pp. 1734-1736.
5. *"Light induced stress in a-Si$_{1-x}$Ge$_x$:H alloys and its correlation with the Staebler-Wronski effect"* **E. Spanakis**, E. Stratakis, P. Tzanetakis, H. Fritzsche, S. Guha and J. Yang, Journal of Non-Crystalline Solids 299-302 (2002) pp. 521-524.

6. *"Silicon electron emitters fabricated by UV laser pulses"* V. Zorba, P. Tzanetakis, C. Fotakis, **E. Spanakis**, E. Stratakis, D. G. Papazoglou and I. Zergioti, Applied Physics Letters 88 (2006) pp. 081103/1-081103/3.
7. *"Metastable photo-expansion of Amorphous Hydrogenated Silicon produced by exposure to short laser pulses"* **E. Spanakis**, E. Stratakis and P. Tzanetakis Journal of Non-Crystalline Solids 352 (2006) pp. 429-433.
8. "*Atomic Force Microscopy based, multi-photon, photoelectron emission imaging"* **E. Spanakis**, A. Chimmalgi, E. Stratakis, C.P. Grigoropoulos, C. Fotakis and P. Tzanetakis, Applied Physics Letters 89 (2006) pp. 013110/1-013110/3
9. "*Field Emission properties of arrays and extended areas of laser fabricated Silicon microstructures"* V Zorba, E Stratakis, **E Spanakis**, D G Papazoglou, I Zergioti, P Tzanetakis, C. Fotakis Proceedings of the Institution of Mechanical Engineers, Part N, Journal of Nanoengineering and Nanosystems, Vol. 220 (2007) pp. 143-150
10. *"Visual perception of colorful petals reminds us of classical fragments."* D. Anglos, S. Rhizopoulou, A. Argiropoulos, **E. Spanakis**, D. Gikas, N. Alexandredes, and D. Koukos. Nature Precedings <http://hdl.nature.com/10101/npre.2008.1523.1> (2008)
11. "*Imaging dielectric properties of Si nanowire oxide with conductive atomic force microscopy complemented with femtosecond laser illumination*" E. Stratakis, N. Misra, **E. Spanakis**, D. J. Hwang, C. P. Grigoropoulos, C. Fotakis and P. Tzanetakis, Nano Letters 8 (2008) pp. 1949 – 1953.
12. *"Ultraviolet laser structuring of Silicon Carbide for cold cathode applications"* **E. Spanakis**, J. Dialektos, E. Stratakis, V. Zorba, P. Tzanetakis and C. Fotakis, Physica Stαtus Solidi (c) 5 (2008) pp. 3309 – 3313.
13. *"Tailoring the wetting response of silicon surfaces via fs laser structuring"* V. Zorba, E. Stratakis, M. Barberoglou, **E. Spanakis**, P. Tzanetakis, C. Fotakis Applied Physics A 93 (2008) pp. 819 - 825
14. *"Biomimetic artificial surfaces quantitatively reproduce the water repellency of a Lotus leaf"* V. Zorba, E. Stratakis, M. Barberoglou, **E. Spanakis**, P. Tzanetakis, H. Anastasiadis and C. Fotakis Advanced Materials 20 (2008) pp. 4049 – 4054
15. "*Laser structuring of water-repellent biomimetic surfaces*" M. Barberoglou, P. Tzanetakis, C. Fotakis, E. Stratakis, **E. Spanakis**, V. Zorba, S. Rhizopoulou, and S. Anastasiadis SPIE Newsroom 19/12/2008 doi: 10.1117/2.1200901.1441 pp. 1-3.
16. *"Bio-inspired water repellent surfaces produced by ultrafast laser structuring of silicon"* M. Barberoglou, V. Zorba, E. Stratakis, **E. Spanakis**, P. Tzanetakis, S. H. Anastasiadis, and C. Fotakis Applied Surface Science 255 (2009) pp. 5425 - 5429
17. *"Polymer-nanotube composite mats with improved field emission performance and stability"* E. Stratakis, E. Kymakis, **E. Spanakis**, P. Tzanetakis and E. Koudoumas Physical Chemistry Chemical Physics 11 (2009) pp. 703 – 709
18. "*Influence of solution chemistry on the properties of hydrothermally grown TiO2 for advanced applications"* D. Vernardou, **E. Spanakis**, E. Stratakis, N. Katsarakis, E. Kymakis, E. Koudoumas Catalysis Today 144 (2009) pp. 172 – 176
19. "*A Comparative Study of the Photoinduced Properties of TiO_2/SiO_2 and $TiO_2/ZnO/SiO_2$ Layers Prepared by Chemical Routes"* D. Vernardou, **E. Spanakis**, K. Vlachou, G. Kalogerakis, J. Costello, E. Koudoumas, N. Katsarakis, and M. Pemble Electrochemical Society Transactions 25 (2009) pp. 73 - 80 .
20. *"Metal-coated silicon spike cold-electron emitters show improvement of performance with operation"* **E. Spanakis**, M. Barberoglou., V. Zorba, P. Tzanetakis and C. Fotakis Applied Physics Letters 96 (2010) pp. 033501 - 033503.
21. *"Metal coated, fs-laser fabricated silicon spikes as electron emitters for cold cathode applications"* **E. Spanakis**, M. Barberoglou., P. Tzanetakis and C. Fotakis Materials Research Society Symposium Proceedings Vol. 1195 (2010) B14-04

22. *"Aspects on the relief of living surfaces using atomic force microscopy allow "art" to imitate nature"* R. Polymeni, **E. Spanakis**, A. Argiropoulos and S. Rhizopoulou Integrative Zoology Vol. 5 (2010) pp. 218-225.

23. *"Hydrothermal growth of V_2O_5 photoactive films at 95 ^oC at low temperatures"* D. Vernardou, **E. Spanakis**, G. Kenanakis, E. Koudoumas and N. Katsarakis Materials Chemistry and Physics 124 (2010) pp. 319 - 322.

24. *"Electrochemical and photocatalytic properties of WO_3 coatings grown at low temperatures"* D. Vernardou, H. Drosos, **E. Spanakis**, E. Koudoumas, C. Savvakis and N. Katsarakis Journal of Materials Chemistry 21 (2011) pp. 513-517

25. *"A Study of the Electrochemical Performance of Vanadium Oxide Thin Films grown by Atmospheric Pressure Chemical Vapour Deposition"* D. Vernardou, P. Paterakis, H. Drosos, **E. Spanakis**, I.M. Povey, M.E. Pemble, E. Koudoumas, N. Katsarakis Solar Energy Materials and Solar Cells 95 (2011) pp. 2842-2847

26. "*Field-emission properties of low-temperature, hydrothermally grown tungsten oxide"* M. Trapatseli, D. Vernardou, P. Tzanetakis and **E. Spanakis** ACS Applied Materials and Interfaces 3 (2011) pp.2726-2731

27. *"Electrochemical Properties of Amorphous WO_3 Coatings Grown on Polycarbonate by Aerosol - Assisted CVD"*, D. Vernardou, H. Drosos, **E. Spanakis**, E. Koudoumas, N. Katsarakis, M. E. Pemble Electrochimica Acta 65 (2012) pp. 185-189.

28. *"Electrochemical activity of electrodeposited vanadium oxide coatings"* D. Vernardou, A. Sapoutzis, **E. Spanakis**, G. Kenanakis, E. Koudoumas, N. Katsarakis Journal of the Electrochemical Society 160(1) (2013) pp. D6-D9.

29. *"Thermochromic vanadium oxide coatings grown by APCVD at low temperatures"* D. Louloudakis, D. Vernardou, **E. Spanakis**, N. Katsarakis, E. Koudoumas Physics Procedia 46 (2013) pp. 137-141

30. *"Electrochemical properties of vanadium oxide coatings grown by APCVD on glass substrates"* D. Louloudakis, D. Vernardou, **E. Spanakis**, N. Katsarakis, E. Koudoumas Surface Coatings and Technology 230 (2013) pp. 186-189

31. *"Effect of gold and silver nanoislands on the electrochemical properties of carbon nanofoam"* **E. Spanakis**, M. Pervolaraki, J. Giapintzakis, N. Katsarakis, E. Koudoumas, D.Vernardou Electrochimica Acta 111 (2013) pp. 305-313

32. *"Electrochemical properties of vanadium oxide coatings grown by hydrothermal synthesis on FTO substrates"* D. Vernardou, D. Louloudakis, **E. Spanakis**, N. Katsarakis and E. Koudoumas New Journal of Chemistry 38 (2014) pp.1959-1964

33. *"Electrochemical properties of opal-V_6O_{13} composites"* D. Vernardou, M. Apostolopoulou, D. Louloudakis, **E. Spanakis**, N. Katsarakis, E. Koudoumas, J. McGrath, M.E. Pemble Journal of Alloys and Compounds 586 (2014) pp. 621–626

34. *"Thermochromic amorphous VO_2 coatings grown by APCVD using a single-precursor"* D. Vernardou, D. Louloudakis, **E. Spanakis**, N. Katsarakis, E. Koudoumas, Solar Energy Materials and Solar Cells 128 (2014) pp. 36-40

35. *"Electrodeposition of V_2O_5 using ammonium metavanadate at room temperature"* D. Vernardou, **E. Spanakis**, N. Katsarakis, E. Koudoumas, Advanced Materials Letters 5 (2014) pp.569-572

36. *"Effect of O_2 flow rate on the electrochromic response of WO_3 grown by LPCVD"* K. Psifis, D. Louloudakis, D. Vernardou, **E. Spanakis**, G. Papadimitropoulos, D. Davazoglou, N. Katsarakis and E. Koudoumas Physica Stαtus Solidi (c) 12 (2015) pp. 1011-1015.

37. *"Effect of O_2 flow rate on the thermochromic performance of VO_2 coatings grown by atmospheric pressure CVD"* D. Louloudakis, D. Vernardou, **E. Spanakis**, S. Dokianakis, M. Panagopoulou, G. Raptis, E. Aperathitis, G. Kiriakidis, N. Katsarakis and E. Koudoumas Physica Stαtus Solidi (c) 12 (2015) pp. 856-860.

38. *"Study of petal topography of Lysimachia arvensis grown under natural conditions"* S. Rhizopoulou, **E. Spanakis**, A. Argiropoulos Acta Botanica Gallica: Botany Letters 162 (2015) pp. 355-364.

39. *"Functional Properties of APCVD VO_2 Layers"* D. Vernardou, D. Louloudakis, **E. Spanakis**, N. Katsarakis, E. Koudoumas International Journal of Thin Films Science and Technology 4 (2015) pp. 187-191

40. *"Atmospheric pressure chemical vapor deposition of amorphous tungsten doped vanadium dioxide for smart window applications"* D. Louloudakis, D. Vernardou, **E. Spanakis**, M. Suchea, G. Kenanakis, M. Pemble, C. Savvakis, N. Katsarakis, E. Koudoumas, G. Kiriakidis Advanced Materials Letters 7 (2016) pp. 192-196

41. *"Functional micromorphology of petals of Chaenomeles japonica exposed to humid and cold season"* A. Argiropoulos, **E. Spanakis**, S. Rhizopoulou Acta Physiologiae Plantarum (2017) 39: 246. (https://doi.org/10.1007/s11738-017-2542-2)

42. *"Thin film growth of delafossite β-$NaFeO_2$ on a ZnO layer by pulsed laser deposition"* I. Bakaimi, E.L. Papadopoulou, G. Kenanakis, **E. Spanakis**, A. Lappas Thin Solid Films 645 (2018) pp. 424-430

7. MANUSCRIPTS SUBMITTED FOR PUBLICATION

8. PATENTS

1. *'Imaging of Nanodevices and Nanostructures with Electrical Atomic Force Microscopy Complemented with Femtosecond Laser Illumination'.* Application for a patent to the US Patent Office from C. P. Grigoropoulos, N. Misra, D. J. Hwang, C. Fotakis, P. Tzanetakis, E. Stratakis και E. Spanakis (*submitted – 2008*)

9. CONFERENCE PARTICIPATIONS (with contribution to published conference proceedings or abstracts)

1. Participation to the 11th Workshop on Quantum Solar Energy Conversion, 14-20 March 1999, Wildhaus, Switzerland with the study: "Light-induced defect creation in Hydrogenated Amorphous Silicon in the presence of positive space charge".

2. Participation to the 18th International Conference on Amorphous and Microcrystalline Semiconductors (ICAMS), 22-27 August 1999, Snowbird Utah, USA with the studies:

- **ii.** "Space charges resulting from photocurrents exceeding the thermionic emission currents in a-Si:H"
- **iii.** "Stress and internal friction associated with light-induced structural changes of a-Si:H deposited on crystalline Silicon microcantilevers".

3. Participation to the 15th Panhellenic Conference on Solid State Physics and Materials Science, Patras, Greece, 26-29 September 1999 with the studies:

- **i.** " Space charges in photoconducting hydrogenated amorphous silicon".
- **ii.** "Photoinduced metastable changes of the mechanical properties of hydrogenated amorphous silicon".

4. Participation to the 16ο Panhellenic Conference on Solid State Physics and Materials Science Nafplio, Greece 17-20 September 2000 with the study: "Hydrogen effects on the mechanical properties and the photo-induced stress of hydrogenated amorphous silicon".

5. Participation to the 19th International Conference on Amorphous and Microcrystalline Semiconductors (ICAMS), 27-31 August 2001, Nice, France with the study "Light induced stress in a-$Si_{1-x}Ge_x$:H alloys and its correlation with the Staebler-Wronski effect".

6. Participation to the 19° Panhellenic Conference on Solid State Physics and Materials Science, Thesaloniki, 21-24 September 2003 with the studies:

i. "Intrinsic compressive stress and photoinduced expansion of nanocrystalline hydrogenated silicon thin films".

ii. "Photoinduced expansion of hydrogenated amorphous silicon under ultra-short laser pulse illumination".

7. Participation to the 19th International Conference on Laser Ablation, Tenerife, Spain, 24-28 September 2007 with the study "Tailoring the wetting response of silicon surfaces via fs laser structuring".

8. Participation to the Laser Processing for Semiconductor Devices: Science and Technology Workshop, Saint-Malo France, 1-2 October 2007 with the study "Ultraviolet laser structuring of silicon carbide for cold cathode applications".

9. Participation to the 2008 Spring Meeting of the European Materials Research Society (E-MRS), Strasbourg France, 26 – 29 May 2008 with the study "Bio-inspired water repellent surfaces produced by ultrafast laser structuring of silicon"

10. Participation to the 24° Panhellenic Conference on Solid State Physics and Materials Science, Heraklion, Crete, Greece, 21-24 September 2008 with the studies:

a. "Hydrothermal Synthesis of Photocatalytically Active Tungsten Oxides"

b. "Characterization Of Hydrothermally Grown Vanadium Oxides For Potential Application On Smart Glazings".

11. Participation to the 2nd International Symposium on Transparent Conducting Oxides, Hersonisos, Crete, Greece, 22-26 October 2008 with the study: "Hydrothermal growth of Fe^{+3} doped TiO_2 on glass for self-cleaning applications".

12. Participation to the 216th Electrochemical Society Meeting, Vienna, Austria, 4-9 October 2009 with the study: "A Comparative Study of the Photoinduced Properties of TiO_2/SiO_2 and $TiO_2/ZnO/SiO_2$ Layers Prepared by Chemical Routes"

13. Participation to the 2009 Materials Research Society Fall Meeting, Boston US., 30 Nov. – 4 Dec 2009 with the studies:

a. "Metal coated, fs-laser fabricated silicon spikes as electron emitters for cold cathode applications"

b. "One-pot direct hydrothermal approach to the design and fabrication of photoactive materials"

14. Participation to the International Conference on Coatings on Glass and Plastics, Braunschweig Germany, 13-17 June 2010 with the study "Electrochromic properties of WO_3, V_2O_5 and TiO_2 prepared by hydrothermal growth at 95 °C"

15. Participation to the 3rd International Scientific Conference on Energy and Climate Change, Athens Greece 7-8 October 2010 with the study "Using an Atmospheric Pressure Chemical Vapor Deposition Process for the Development of Smart Windows"

16. Participation to the 3rd International Symposium on Transparent Conductive Materials, Heraklion, Greece 17-21 October 2010 with the study "Electrochemical and photocatalytic properties of WO_3 coatings grown at low temperatures"

17. Participation to the 20th Biennial European Conference on Chemical Vapor Deposition - EuroCVD 20, Sempach, Switzerland 13-17 July 2015 with the studies "Effect of Ag metal on the electrochemical response of vanadium oxides grown by AACVD" and " Effect of O_2 flow rate and temperature on the electrochromic response of WO_3 grown by LPCVD"

10. DISTINCTIONS

1. The article entitled "*Atomic Force Microscopy based, multi-photon, photoelectron emission imaging"* by E. Spanakis, A. Chimmalgi, E. Stratakis, C.P. Grigoropoulos, C. Fotakis and P. Tzanetakis was selected by the *American Institute of Physics* and the *American Physical Society* for the July 2006 issue of the online *Virtual Journal of Nanoscale Science & Technology (http://www.vjnano.org).*
2. The article entitled "*Atomic Force Microscopy based, multi-photon, photoelectron emission imaging"* by E. Spanakis, A. Chimmalgi, E. Stratakis, C.P. Grigoropoulos, C. Fotakis and P. Tzanetakis was selected by the *American Institute of Physics* and the *American Physical Society* for the August 2006 issue of the online *Virtual Journal of Ultrafast Science (http://www.vjultrafast.org).*
3. Invited talk for the Department of Mechanical and Manufacturing Engineering of the University of Cyprus (19 October 2008). Title: "Innovative surface structuring and scanning microscopy techniques at the nanoscale, using short laser pulse".
4. The article entitled "*Field-emission properties of low-temperature, hydrothermally grown tungsten oxide"* by M. Trapatseli, D. Vernardou, P. Tzanetakis and E. Spanakis was selected by the Canadian *Renewable Energy Global innovations* company as a key scientific article to appear in its December 2011 online issue (***http://reginnovations.com***)
5. The article entitled "*A study of the electrochemical performance of vanadium oxide thin films grown by atmospheric pressure chemical vapour deposition"* by D. Vernardou, P. Paterakis, H. Drosos, E. Spanakis, I.M. Povey, M.E. Pemble, E. Koudoumas, N. Katsarakis was selected by the Canadian *Renewable Energy Global innovations* company as a key scientific article to appear in its April 2012 online issue (***http://reginnovations.com***)
6. Frequent reviewer for the Journals: α) *Journal of Applied Physics* (American Institute of Physics), b) *Applied Physics A* (Springer) and c) *Applied Materials and Interfaces* (American Chemical Society)

11. TEACHING EXPERIENCE

9/2002 – 8/2004: *Physics Lab I: Mechanics -Heat* and *Physics Lab II: Electromagnetism – Optics*: 1st and 2nd year undergraduate courses of the Department of Materials Science and Technology, University of Crete, Greece

10/2004 – 01/2012: *Physics Lab I: Mechanics -Heat* and *Physics Lab II: Electromagnetism – Optics*: 1st year undergraduate courses of the Department of Sciences for Civil Engineers, Technical Educational Institute of Crete, Greece

9/2004 – today: *Synthesis and Characterization of Hard Materials*: 3rd year undergraduate lab course of the Department of Materials Science and Technology, University of Crete, Greece

9/2009 – today: *Synthesis and Characterization of Soft Materials*: 3rd year undergraduate lab course of the Department of Materials Science and Technology, University of Crete, Greece

9/2013 – today: *Physics Laboratory I*: *Mechanics-Thermodynamics* 2nd year undergraduate lab course of the Department of Materials Science and Technology, University of Crete, Greece

9/2013 – today: *Physics Laboratory II*: *Electromagnerism-Optics* 2nd year undergraduate lab course of the Department of Materials Science and Technology, University of Crete, Greece

12. RESEARCH CONTRACTS

9/2005: "Scanning Probe Multi Photo-Electron Emission Microscopy using short pulse lasers". A research collaboration of the University of California, Berkeley CA and the Institute of Electronic Structure and Lasers, FORTH, Greece
Funding: European Cummunity.

9/2005 – 8/2007: "Experimental study of localized non-linear oscillations in silicon cantilever arrays"
Action: *Pythagoras-Reinforcement of research in Greek Universities*
Funding: Greek Ministry of Education.

1/2007 – 5/2008: Visiting researcher for the Institute of Electronic Structure and Lasers, FORTH, Greece

11/2008- 10/2010: Scientific Staff of the Institute of Electronic Structure and Lasers, FORTH, Greece

09/2012- 03/2015: "Thermo-Optical characterization of doped Vanadium oxide thermochromic thin films deposited on window glass and flexible PET substrates"
Action: *Synergasia. Smart Inexpensive Thermochromic Windows for Energy Saving in Buildings-Exothemo.*
Funding: European Cummunity and Greek Ministry of Education.

02/2015 - 11/2015:"Finalization and characterization of an electrochromic device"
Action: "Advanced low-cost electrochromic windows" *Archimedes III, Strengthening research at the Technological Educational Institute TEI of Crete.*
Funding: European Community and Greek Ministry of Education